Upper Murrumbidgee Demonstration Reach

Improving fish habitat and river health in the Upper Murrumbidgee

WHAT IS THE UPPER MURRUMBIDGEE DEMONSTRATION REACH?

The demonstration reach is a 100km section of the Murrumbidgee River from Bredbo (NSW) to Casuarina Sands (ACT). This program demonstrates techniques that landholders and community groups can use to rehabilitate and protect aquatic and riparian habitat.

UPPER MURRUMBIDGEE RIVER HEALTH

The Murray-Darling Basin Authority through the Sustainable Rivers Audit (SRA Report 1*) has been monitoring river ecosystem health. The report found that fish communities in the upper Murrumbidgee River were in poor condition with high numbers of alien fish and very low numbers of native fish. Only 6% of the total catch was native.

Murray cod, Trout cod, Macquarie perch, Golden perch and Murray crays are still found in the Murrumbidgee River in the ACT, although in low numbers. The Murrumbidgee River contains important fish habitat in the ACT and NSW. The Murrumbidgee River Corridor is also listed on the National Estate.

**A report on the ecological health of rivers in the Murray-Darling Basin, 2004-2007*

Golden Perch Macquaria ambigua
(c) MDBA: Photographer Marjorie Crosby-Fairfall

PROTECTED
Murray Crayfish Euastacus armatus
(c) MDBA: Photographer Marjorie Crosby-Fairfall

Murray Cod Maccullochella peelii
(c) MDBA: Photographer Marjorie Crosby-Fairfall

PROTECTED
Trout Cod Maccullochella macquarensis
(c) MDBA: Photographer Marjorie Crosby-Fairfall

Australian Government | MURRAY–DARLING BASIN AUTHORITY

CARING FOR OUR COUNTRY

ACT Government

ACTEW CORPORATION

SOUTHERN ACT CATCHMENT GROUP INC

UPPER MURRUMBIDGEE DEMONSTRATION REACH

WATERWATCH Australian Capital Territory Communities Caring for Catchments

THARWA FISH HABITAT PROJECT

WHAT WILL WE DO?

The ACT Government together with the Upper Murrumbidgee Demonstration Reach initiative, received a Caring for Our Country grant in 2011 to improve fish habitat downstream of Tharwa. The grant funding will be used to install two Engineered Log Jams (ELJs), constructed of hardwood timber logs and rock. Some existing rock groynes will be augmented. Riparian plantings will be used to further stabilise the bank and the ELJ after construction.

WHAT IS AN ENGINEERED LOG JAM?

ELJ's are artificial habitat structures made of large logs and branches (snags), supplemented by rocks. They are built following sound engineering design principles.

Construction of an ELJ.

PROTECTED
Macquarie Perch
Macquaria australasica
(c) MDBA: Photographer
Marjorie Crosby-Fairfall

HOW WE MEASURE THE SUCCESS

Fish will be monitored in the river reach both before and after ELJ construction. Also, the local community could assist the project with Waterwatch monitoring and riparian assessment. To become involved with monitoring contact the Southern ACT Catchment Group Waterwatch coordinator at Waterwatch@sactcg.org.au

WHAT WILL THE ELJ DO?

An ELJ will provide the opportunity for fish to move more freely through the river to find food and shelter. Large sections of the river near Tharwa have been blanketed by a "sand slug" which robs the native fish of habitat. The ELJs along with the existing rock groynes are designed to scour the sand, creating pools and incorporating complex woody habitat, within this otherwise homogeneous sand bed reach. The current lack of pools and appropriate habitat is acting as a barrier to fish movement.

The rationale for using ELJ structures includes that they:

- are a proven technique for river rehabilitation in rivers elsewhere in Australia.
- have a positive effect on the physical and ecological functioning of streams.
- make use of recycled logs which would otherwise be burnt or turned into woodchip.
- are more cost effective than equivalent loose rock structures.
- are more consistently beneficial than boulder structures.
- are made of wood which is a natural habitat component for many riverine animals, including fish.

WHY IS WOOD AND OTHER STRUCTURAL HABITAT IMPORTANT?

Snags form an important component of rivers as they provide:

- **spawning sites for fish.**
- **a place for fish and invertebrates to hide from predators.**
- **habitat for algae and micro-organisms that are food for fish.**

WHERE DID THE HABITAT GO?

Sand build-up is a major threat to the native fish of the Upper Murrumbidgee. Sand smothers rocky and woody habitat and reduces fish passage. Sand still enters the river today from upstream gully slope and river bank erosion, but is largely a legacy of historical clearing and over grazing. Historical tree clearance has reduced the once naturally occurring sources of large woody debris, meaning that it is necessary to artificially augment the supply of wood to the river today.

DID YOU KNOW?

- **Streams with snags are likely to have higher numbers of fish and invertebrates than streams without.**
- **Around 80% of Murray cod are found within 1 metre of structural habitat.**
- **Up to 40% of a fish's diet can come from trees, emphasising the importance of a healthy riparian zone.**
- **Within the Murray-Darling Basin, native fish populations are currently estimated to be about 10% of pre-European settlement.**

Construction of an ELJ.

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FURTHER READING AND CONTACTS:

UMDR website: **www.upperbidgeereach.org.au**
Technical report "Design guideline for the reintroduction of wood into Australian streams": **lwa.gov.au/products/px061171**